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EDITORIAL OFFICES
DES PLAINES, ILL. 60017-5080
Cahners Plaza
1350 E. Touhy Ave. P.O. Box 5080
312/635-8800

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What's The Best Package Material?

Recycling proponent says it's plastic

The way Wayne E. Pearson figures it, plastic is the perfect packaging material for this age of growing concern about the environment. Pearson, executive director of the Plastics Recycling Foundation, visited PACKAGING magazine recently with E. Allen Polka of Soltex Polymer Corp. to discuss plastics recycling. Their entire presentation can be summed up best by Pearson's definition of "ideal" packaging.

"It should be recyclable," he said, "and plastics are being recycled. But if the material is not recycled, you don't want it to decompose in a landfill. If you're not going to send it to a landfill, you want to incinerate it without any ash. And you can incinerate plastics without any ash." He added, "If the public understood this, instead of banning plastics they would be demanding that plastics be used."

Comingled plastics plus fragments of paper and aluminum make up the chunk of lumberlike material displayed by E. Allen Polka of Soltex Polymer Corp. (left) and Wayne E. Pearson of the Plastics Recycling Foundation.

Pearson acknowledged that although consumers appear ready and willing to separate used plastic containers from nonrecyclable materials, they remain skeptical of incineration. Polyethylene, polyvinyl chloride, and polyethylene terephthalate, he said, "burn perfectly at 19,000 BTU per pound to produce carbon dioxide and water and nothing else unless you have added a pigment." Neverthless, he added, "That's not the public's perception of how to deal with this unbelievably complex issue of solid-waste management."

Pearson and Polka illustrated one alternative to incineration with a sample of extruded lumberlike material made from comingled plastics, fragments of paper labels, and ground-up bits of aluminum from drop-ring closures. Pearson said, "The value of this stuff overseas is incredible. It will find great use in China, for example." He said he believed Asia would soon become a highly important market for post-consumer plastic containers —the raw material from which such wood substitutes are made.

The Plastics Recycling Foundation has prepared a report titled *Plastics Recycling: A Strategic Vision*. For information, contact the group at 1275 K St., Washington, D.C. 20005.

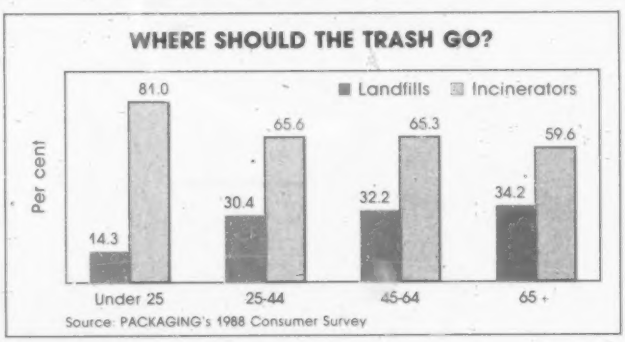
Companies Unite To Tout Paperboard

Environmental benefits stressed

As president of the newly formed Pro-Environment Packaging (PEP) Council, Samuel Posner will be promoting the ecological benefits of paperboard. Members of the New York City-based group now comprise Champion International, Georgia-Pacific, Gaylord Container, International Paper, the Newark Group, Stone Container, Union Camp.

Posner said the PEP Council will be talking up the fact that some paperboard packaging is fully biodegradable and that even plastic-coated paperboard is partially degradable.

"Where there are landfills," Posner said, "isn't it more beneficial to have coated paperboard there than polystyrene or PVC? My guess is that it's better to have something that biodegrades instead of something that will be there forever."



Incineration Opinions Vary By Age Group

Youngest consumers like it most of all

As part of PACKAGING magazine's fourth annual Consumer Survey, consumers were asked to state their preference for either landfills or incineration as a means of trash disposal. Overall, support for incineration ran higher than that for landfills.

Responses differed significantly by age group. As shown on the accompanying chart, consumers in the Under 25 age group said they preferred incineration over landfilling by a margin of 67 percentage points. Among consumers in each of the other age groups, however, the margin fell to only about 30 points.

The survey was sent to 1,000 households nationwide in early 1988. A detailed report on information supplied by the 756 respondents appeared in PACKAGING's June issue.

California Eateries Recycle Glass

Phoenix Project participation grows

More than 1,000 restaurants, bars, and hotels throughout California are recycling glass every day as participants in the Phoenix Project, sponsored by the California Glass Recycling Corp.

The businesses receive at least $20 a ton for their used glass bottles and jars, which helps defray their operating costs. Beyond that, some of the establishments are donating revenue from the recycled glass to charities.

Local recyclers provide bins, pick up the glass, and keep the bin areas clean. The CGRC provides worksheets so the establishments can calculate how much glass they generate monthly and assists them in preparing press releases promoting their participation in the project.

For more information, contact the CGRC at 1225 Eighth St., Suite 590, Sacramento, Calif. 95814.

SPECIAL REPORT

TOP 100 PACKAGING GIANTS

Which companies spent the most on packaging materials and containers for 1987? In this exclusive report, PACKAGING presents the data

By Mark Spaulding Associate Editor

The 100 U.S. companies listed in this year's Packaging Giants report are a formidable force in the American marketplace. Together, these firms sold more than $525.7 billion of packaged goods to U.S. consumers. Their share of the gross national product has an equally important impact on the domestic packaging industry.

Our exclusive list of the Top 100 Packaging Giants consumed more than $18.84 billion worth of materials and finished containers last year. That's more than 31 per cent of the total estimated U.S. packaging industry in 1987. To put it into a sharper focus, the Giants spent more than $72 million each business day. Anheuser-Busch, our No. 1-ranked company, alone spends about $8 million per business day.

Clearly, the nation's largest consumers of packaging materials and containers sell a cornucopia of products . . . from food and pharmaceuticals to cosmetics, cars

and computers. But which exactly are the companies that spent the most money on packaging in 1987?

How the survey was done

For the answers to our second annual Packaging Giants survey, we compiled data ranging from the U.S. Department of Commerce, our Cahners Economics division, corporate annual reports, the Fortune 500, and the packagers themselves. Sales from international operations have been eliminated, but the value of self-manufactured containers has been added. Domestic sales for each type of product were multiplied by an accurate percentage typically spent to package such products. The result is the most comprehensive listing available of packaging expenditures by major American consumer-goods companies. ■

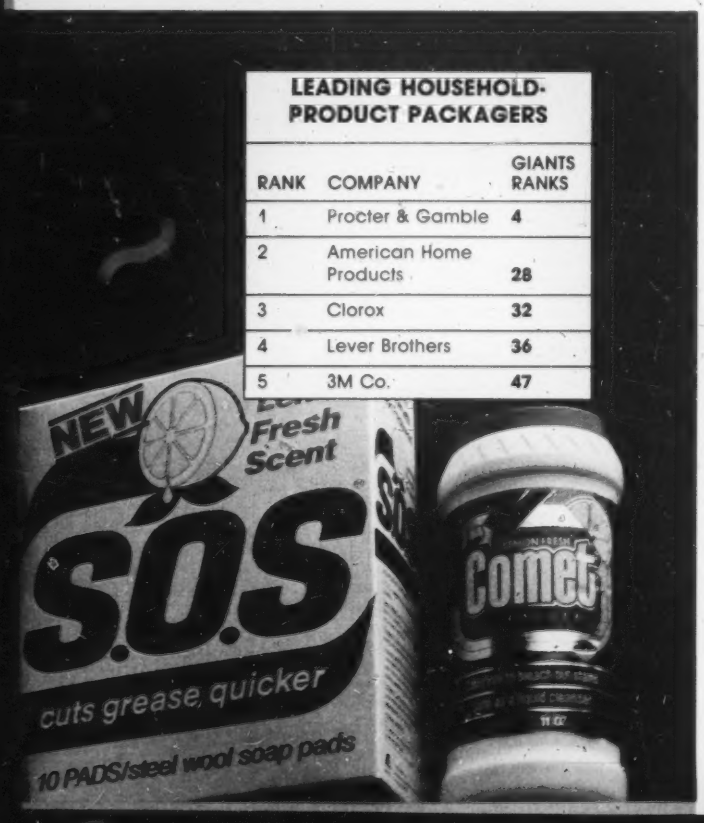
Nine of the top 10 packaging consumers are major food and beverage firms such as Anheuser-Busch, RJR Nabisco, Philip-Morris and Kraft.

Rank	Company (location)	$ Spent on Packaging
1	Anheuser-Busch (St. Louis, MO)	$2,100,000,000
	Major Brands: Budweiser, Bud Light, Busch, Michelob, Natural Light, L.A., Carlsberg, Colonial, Earth Grains, Eagle	
2	Philip-Morris (New York, NY)	$1,777,189,000
	Major Brands: Marlboro, Miller, High Life, Lite, Genuine Draft, General Foods, Jell-O, Maxwell House, Oscar Mayer, Entenmann's, Post, Birds Eye	
3	RJR Nabisco (Atlanta, GA)	$1,120,000,000
	Major Brands: Winston, Salem, More, Now, Camel, Nabisco, Del Monte, Planters, Lifesavers, Oreo, Baby Ruth, Butterfinger, Ortega, Fleishmann's, Grey Poupon, Ritz, A.1., Triscuit, Comet, Easy Cheese, Care-Free, Blue Bonnet, Chun King, Milk Bone, Regina, Hawaiian Punch	
4	Procter & Gamble (Cincinnati, OH)	$731,972,700
	Major Brands: Tide, Bounce, Downy, Cheer, Joy, Ivory, Spin and Span, Mr. Clean, Comet, Jif, Crisco, Duncan Hines, Crush, Folger's Charmin, Pampers, Luvs, Oil of Olay, Zest, Lava, Sure, Secret, Vidal Sassoon, Pantene, Crest, Gleem, Scope, Nyquil, Vicks, Pepto-Bismol, Bain de Soleil, Always, Bounty, Citrus Hill, Pert Plus	
5	Pepsico (Purchase, NY)	$672,602,000
	Major Brands: Pepsi, Diet Pepsi, Mountain Dew, 7UP, Diet 7UP, Cherry 7UP, Slice, Fritos, Cheetos, Doritos, Tostitos, Lay's, Ruffles, O'Grady's	
6	Coca-Cola (Atlanta, GA)	$531,760,000
	Major Brands: Coke, Coca-Cola Classic, Diet Coke, Sprite, Diet Sprite, Tab, Minute Maid, Bacardi, Hi-C	
7	Kraft (Glenview, IL)	$529,440,000
	Major Brands: Kraft, Velveeta, Philadelphia Brand, Polly-O, Breakstone, Breyers', Knudsen, Sealtest, Frusen Gladje, Mrs. Tucker's, Light n'Lively, Miracle Whip, Duracell	
8	Sara Lee (Deerfield, IL)	$425,000,000
	Major Brands: Sara Lee, Jimmy Dean, Hillshire Farm, Mr. Turkey, Kiwi, Chef Pierre, Fuller Brush, Hanes, L'eggs, Coach, Aris-Isotoner	

Top 10 food packagers consumed more than $8.5 billion on packaging

Rank	Company (location)	$ Spent on Packaging
9	**Kimberly-Clark** (Dallas, TX) **Major Brands:** Kleenex, Kotex, New Freedom, Huggies, Depend	$361,264,400
10	**Campbell Soup** (Camden, NJ) **Major Brands:** Campbell's, Swanson, Vlasic, Pepperidge Farm, Mrs. Paul's, Prego, Le Menu, Franco-American, Juice Bowl, V8	$332,544,764
11	**ConAgra** (Omaha, NE) **Major Brands:** Armour, Banquet, Morton, Taste O'Sea, Singleton, Country Pride, Peavey, Jack Rabbit, Cropmate	$325,028,907
12	**Joseph E. Seagram & Sons** (New York, NY) **Major Brands:** Seagram's, House of Seagram, Golden Spirits Coolers, Mumm Cordon Rouge, Chateau & Estate, Paul Masson	$324,624,000
13	**Avon Products** (New York, NY) **Major Brands:** Avon, Mediplex, Infusioncare, Foster's	$322,000,000
14	**Adolph Coors** (Golden, CO) **Major Brands:** Coor's, Coor's Light, Coor's Extra Gold, George Killian's, Herman Joseph's	$312,150,000
15	**Borden** (New York, NY) **Major Brands:** Borden, Eagle, Meadow Gold, Lite-Line, Wise, Jays, Soup Starter, Mrs. Grass, Creamettes, Cracker-Jack, Krylon, Elmer's, Rain Dance	$305,383,000
16	**G. Heileman** (LaCrosse, WI) **Major Brands:** Old Style, Special Export, Blatz, Colt 45, Champale	$295,128,000
17	**Scott Paper** (Philadelphia, PA) **Major Brands:** Scotties, ScottCloth, ScotTowels, ScotTissue, Baby Fresh, Sani-Tuff, Cottonelle, Softkins, Wyp-All	$274,927,000
18	**Pillsbury** (Minneapolis, MN) **Major Brands:** Pillsbury, Totino's, Jeno's, Chef Saluto, Green Giant, French's, Haagen-Daz, Van de Kamp's	$265,000,000
19	**General Mills** (Minneapolis, MN) **Major Brands:** Wheaties, Cheerios, Total, Fiber One, Betty Crocker, Gold Medal, Bisquick, Hamburger Helper, Pop Secret, Yoplait, Gorton's, Fruit Corners	$251,000,000
20	**Sterling Drug** (New York, NY) **Major Brands:** Bayer, Panadol, Stri-Dex, Phillips' Milk of Magnesia, Neo-Synephrine, Midol, pHisoDerm, Lysol, Love My Carpet, d-Con, Minwax, Thompson's, Formby's, Ogilvie, Wet Ones, Omnipaque, Inocor, Danocrine, Carpuject	$250,000,000
21	**Brown-Forman** (Louisville, KY) **Major Brands:** Jack Daniel's, Canadian Mist, California Cooler, Southern Comfort, Korbel, Cella, Bolla, Martell, Lenox, ArtCarved, Hartmann	$249,094,000
22	**IC Industries** (Chicago, IL) **Major Brands:** Pepsi-Cola General Bottlers, Pet, Progresso, B&M, Whitman's, Old El Paso, Downy-Flake	$239,612,000

Rank	Company (location)	$ Spent on Packaging
23	Georgia-Pacific (Atlanta, GA) **Major Brands:** Georgia-Pacific, Coralure, Dens-Glass, Dens-Shield, Summit, Coronet, Delta, Mr. Big, Big 'N Thirsty, Big 'N Soft, Big 'N Pretty, Angel Soft, Sparkle	$236,527,000
24	Revlon (New York, NY) **Major Brands:** Max Factor, Almay, Charles of the Ritz, Jean Nate, Krystal, Monteil, Von Furstenburg	$234,476,000
25	H.J. Heinz (Pittsburgh, PA) **Major Brands:** Heinz, Star-Kist, Ore-Ida, Weight Watchers, 9-Lives	$229,051,085
26	Colgate-Palmolive (New York, NY) **Major Brands:** Colgate, Palmolive, Ajax, Curity, Hill's, Irish Spring	$225,300,000
27	Beatrice (Chicago, IL) **Major Brands:** Beatrice, Hunt's, Wesson, Tropicana, Orville Redenbacher, Swift, Eckrich, County Line, Martha White, Aunt Nellie's, Lowrey's	$216,351,000



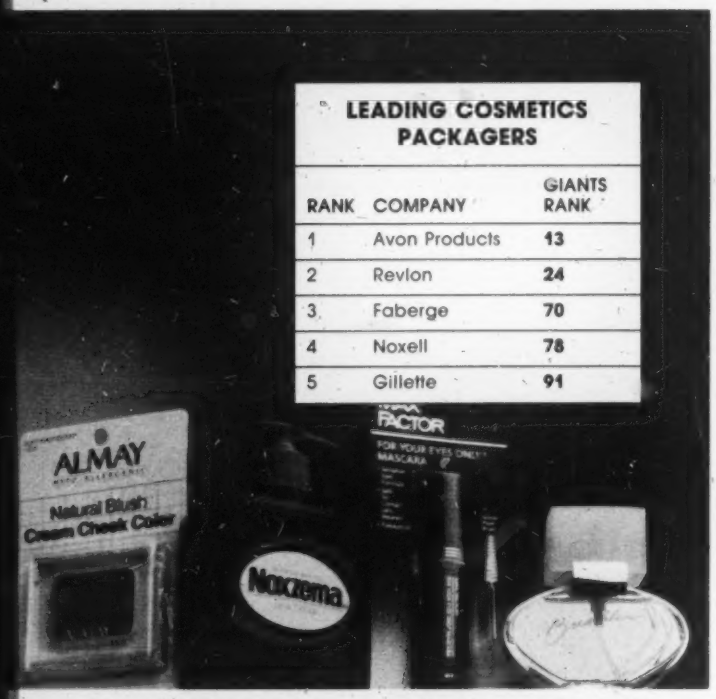
LEADING HOUSEHOLD-PRODUCT PACKAGERS

RANK	COMPANY	GIANTS RANKS
1	Procter & Gamble	4
2	American Home Products	28
3	Clorox	32
4	Lever Brothers	36
5	3M Co.	47

Rank	Company (location)	$ Spent on Packaging
28	American Home Products (New York, NY) **Major Brands:** Advil, Anacin, Dristan, Riopan Plus, Denorex, Preparation H, Chef Boy-ar-dee, Mamma Leone's, Jiffy Pop, Pam, Woolite, Easy-Off, Black Flag	$205,000,000
29	Quaker Oats (Chicago, IL) **Major Brands:** Quaker, Aunt Jemima, Gatorade, Ken-L Ration, Gaines Burger, Golden Grain, Kretschmer, Van Camp's, Ardmore Farms, Fisher-Price	$181,257,180
30	E.I. DuPont de Nemours (Wilmington, DE) **Major Brands:** Teflon, Stainmaster, Selar, Corian, Silverstone, Conoco	$167,925,000
31	General Cinema (Chestnut Hill, MA) **Major Brands:** Pepsi-Cola, Dr. Pepper, 7-Up	$161,394,000
32	Clorox (Oakland, CA) **Major Brands:** Clorox, Formula 409, Litter Green, Kingsford, Olympic, Hidden Valley Ranch, Moore's, Domani, Prince Castle, Liquid-plumr, Soft Scrub, Tilex	$160,000,000
33	Johnson & Johnson (New Brunswick, NJ) **Major Brands:** Johnson's, Band-Aid, StayFree, Sure & Natural, Act, Ortho-Novum	$158,645,000
34	General Motors (Detroit, MI) **Major Brands:** Chevrolet, Pontiac, Oldsmobile, Buick, Cadillac, GMC, GM parts	$153,000,000
35	CPC International (Englewood Cliffs, NJ) **Major Brands:** Hellman's, Best Foods, Karo, Skippy, Knorr, Thomas', Mazola, Mueller's, Arnold, Argo, Brownberry, Old London	$151,000,000
36	Lever Brothers (New York, NY) **Major Brands:** All, Wisk, Snuggle, Sun Light, Surf, Final Touch, Imperial, Dove, Caress, Mrs. Butterworth's	$150,976,600

Household products, from major players such as P&G, Clorox, Dow Chemical and Miles Labs, accounted for 7 per cent of the Giants' packaging expenditures.

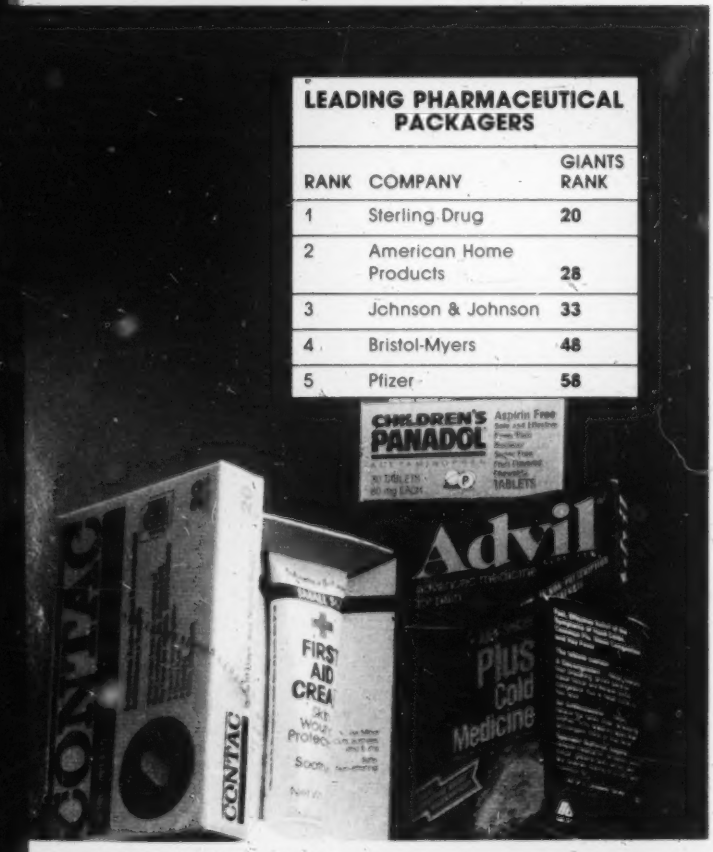
Top 100 spent over $72 million on packaging each business day



LEADING COSMETICS PACKAGERS

RANK	COMPANY	GIANTS RANK
1	Avon Products	13
2	Revlon	24
3	Faberge	70
4	Noxell	78
5	Gillette	91

Cosmetics rang up more than $675 million in packaging purchases last year by the top five firms.



LEADING PHARMACEUTICAL PACKAGERS

RANK	COMPANY	GIANTS RANK
1	Sterling Drug	20
2	American Home Products	28
3	Johnson & Johnson	33
4	Bristol-Myers	48
5	Pfizer	58

Rank	Company (location)	$ Spent on Packaging
37	**Thomas J. Lipton** (Englewood Cliffs, NJ) **Major Brands:** Lipton, Cup-a-Soup, Wish-Bone, Good Humor, Wyler's, FruitSlush, Lawry's, Knox, Sunkist FunFruits, Flavor Tree	$140,000,000
38	**Hershey Foods** (Hershey, PA) **Major Brands:** Hershey's, Reese's, New Trail, Golden, Luden's, Y&S, American Beauty, San Giorgio, Skinner	$132,380,486
39	**Geo. A. Hormel** (Austin, MN) **Major Brands:** Hormel, Black Label, Cure 81, Dinty Moore, Farm Fresh, Frank 'N Stuff, Jennie-O, Little Sizzlers, Mary Kitchen, New Traditions, Spam, Top Shelf, Wranglers	$132,180,000
40	**Ralston-Purina** (St. Louis, MO) **Major Brands:** Ralston, Purina, Hostess, Wonder, Eveready, Energizer	$122,949,000
41	**The Dial Corp.** (Phoenix, AZ) **Major Brands:** Dial, Tone, Pure & Natural, Purex, Trend, Fels, La-France, Brillo, SnoBol, Old Dutch, Cameo, Magic Sizing, Bruce, Lunch Buckets, Ellio's, Appian Way	$121,671,300
42	**General Electric** (Fairfield, CT) **Major Brands:** GE, Hotpoint, RCA, Lexan	$120,000,000
43	**Kellogg** (Battle Creek, MI) **Major Brands:** Kellogg's, Eggo, Pop-Tarts, Mrs. Smith's, Salada, Whitney's	$119,802,600
44	**Ocean Spray Cranberries** (Plymouth, MA) **Major Brands:** Ocean Spray, Firehouse, Mist Kist, Mystic Farms, No-Thaw, Spoonables, River Sweet, Sunfruit	$117,728,000
45	**M&M/Mars** (Hackettstown, NJ) **Major Brands:** M&Ms, Snickers, Three Musketeers, Milky Way, Twix, Combos	$116,494,000

Pharmaceutical companies whose reputations are built around over-the-counter drugs spent the most on packaging materials and containers in this category.

Rank	Company (location)	$ Spent on Packaging
46	Occidental Petroleum (Los Angeles, CA) **Major Brands:** IBP Fresh Beef and Pork	$115,400,000
47	3M Co. (St. Paul, MN) **Major Brands:** Scotch, Scotchgard, Post-it, Soft-Scour	$112,718,000
48	Bristol-Myers (New York, NY) **Major Brands:** Nuprin, Bufferin, Excedrin, Datril, Comtrex, Ban, Vitalis, No Doz, Windex, Drano, Vanish, O-Cedar, Endust, Clairol, Sea Breeze, PreSun, Keri, Enfamil	$111,772,300
49	Dow Chemical USA (Midland, MI) **Major Brands:** Cepacol, Saran Wrap, Handi-Wrap, Ziploc, Spray'n Wash, Texize, Yes, Glass Plus, Tough Act	$110,000,000
50	Ford Motor Co. (Greenfield, MI) **Major Brands:** Ford, Lincoln-Mercury, Merkur, Motorcraft	$107,800,000
51	International Business Machines (Armonk, NY) **Major Brands:** IBM	$99,748,000
52	Westinghouse (Pittsburgh, PA) **Major Brands:** ThermoKing, Longines-Wittenauer, Royal Crown Bottling	$89,134,900
53	Boise Cascade (Boise, ID) **Major Brands:** Boise Cascade, Mega	$89,117,000
54	Eastman Kodak (Rochester, NY) **Major Brands:** Kodak, Eastman, Kodachrome, Ektachrome, Ektapro	$85,112,000
55	American Brands (Old Greenwich, CT) **Major Brands:** Tareyton, Pall Mall, Carlton, Lucky Strike, Jim Beam, Windsor Canadian, Gibley's Gin, Acco, Wilson Jones, Master Lock, Titleist, Prestige, Swingline	$85,069,900
56	PPG Industries (Pittsburgh, PA) **Major Brands:** Pittsburgh Paints	$85,000,000
57	Texaco (White Plains, NY) **Major Brands:** Texaco, Havoline Supreme	$83,102,300
58	Pfizer (New York, NY) **Major Brands:** Feldene, Procardia, Cefobid, Ben-Gay, Barbasol	$80,148,000
59	Tyson Foods (Springdale, AR) **Major Brands:** Tyson, Chick'N Quick, Originals, Country Fresh, Mexican Originals, International Entrees	$80,000,000
60	Dean Foods (Franklin Park, IL) **Major Brands:** Dean, Reiter, McArthur, T.G. Lee, McCadam, Yankee Brand, Chateaugay, Larsen, Freshlike, Veg-All, Peter Piper, Hoffman House, Pudding Plus, Mrs. Weaver's Salads, Juice Services, Sun Flo	$77,338,300
61	United Brands (Cincinnati, OH) **Major Brands:** Chiquita, John Morrell, Rath Black Hawk	$70,858,000
62	Land O'Lakes (Minneapolis, MN) **Major Brands:** Land O'Lakes, Cenex, Lake to Lake, Alex Fries	$70,000,000
63	Tenneco (Houston, TX) **Major Brands:** Tenneco, Walker, Monroe, Ekco, EZ Por, Case IH	$69,000,000
64	Mobil Oil (New York, NY) **Major Brands:** Mobil, Mobil 1, Hefty, Cinch Sak, Lustra	$64,000,000
65	Chevron (San Francisco, CA) **Major Brands:** Chevron, Ethyl	$59,679,085
66	Monsanto (St. Louis, MO) **Major Brands:** Monsanto, Nutrasweet, Acrilan, Lasso, Wear Dated	$59,528,900

Petroleum firms spent $440 million to package resins and motor oils

Rank	Company (location)	$ Spent on Packaging
67	Amoco (Chicago, IL) **Major Brands:** Amoco	$57,297,500
68	Chrysler (Highland Park, MI) **Major Brands:** Chrysler-Plymouth, Dodge, Jeep-Eagle, Mopar	$54,324,000
69	Baxter International (Deerfield, IL) **Major Brands:** Baxter, Pharmaseal, Scientific Products, V. Mueller, Dade, Edwards, Bentley, Fenwal, Hyland, Microscan, Paramax, Exactech	$52,000,000
70	Faberge (New York, NY) **Major Brands:** Faberge, Organics	$51,236,000
71	Gerber Products (Fremont, MI **Major Brands:** Gerber, First Foods, Hankscraft, Nuk, Buster Brown, Weather Tamer, Century, Bilt-Rite, Nursery Originals, Nod-a-Way	$50,705,300
72	Morton-Thiokol (Chicago, IL) **Major Brands:** Morton, Windsor, System Saver, Safe-T-Salt, Adcote, Polybond, Dynalith, Morfast, Automate, Oilsol, Culinox 999	$50,000,000
73	Shell Oil (Houston, TX) **Major Brands:** Shell, Fire and Ice 2000	$49,800,000
74	Standard Oil (Cleveland, OH) **Major Brands:** Standard, Gulf, Barex	$48,404,200
75	Merck & Co. (Rahway, NJ) **Major Brands:** Vasotec, Primaxin, Norozin, Pepcid, Ivermectin	$46,766,300
76	Miles Laboratories (Elkhart, IN) **Major Brands:** Alka-Seltzer, One-A-Day, Flintstones, Multistix, S.O.S. Glass Works, Within, Bactine, Maxion	$43,000,000
77	SmithKline Beckman (Philadelphia, PA) **Major Brands:** Tagamet, Dyazine, Contac, Ecotrin, Softens, Allergan's, Aquacare, Betagan	$42,500,000
78	Noxell (Hunt Valley, MD) **Major Brands:** Noxema, Cover Girl, Clarion, Lestoil	$40,580,000
79	North American Philips (New York, NY) **Major Brands:** Norelco, Magnavox, Sylvania, Genie, Schick	$39,500,000
80	NCR (Dayton, OH) **Major Brands:** NCR	$38,883,000
81	Olin Corp. (Stamford, CT) **Major Brands:** Olin, H-T-H, Pace, Sun, Winchester ammunition	$38,500,000
82	Whirlpool (Benton Harbor, MI) **Major Brands:** Whirlpool, Kenmore, Kitchenaid, Mastercraft	$37,797,500
83	Abbott Laboratories (North Chicago, IL) **Major Brands:** Pulmocare, Abbokinase, Erythrocin, Tranxene, Selsun Blue, Murine, Tronolane, Faultless	$37,324,000
84	Interstate Brands (Kansas City, MO) **Major Brands:** Dolly Madison, Butternut, Holsum, Deli Dan, Deli-Stop, Millbrook, Mrs. Cubbison's	$37,100,000
85	Champion International (Stamford, CT) **Major Brands:** Champion, Nationwide	$37,000,000
86	Wilson Foods (Oklahoma City, OK) **Major Brands:** Wilson, Corn King, TenderCuts, Fischer, Mellwood, Quickcut, Anderson, Toppers, Bake-Rite, Fryrite	$33,501,422
87	Corning Glass Works (Corning, NY) **Major Brands:** Corning Ware, Corelle, Visions, Pyrex, Storage Plus	$32,250,000

Personal-care products cost the Giants about $1.1 billion to package last year.

Rank	Company (location)	$ Spent on Packaging
88	Goodyear Tire & Rubber (Akron, OH) **Major Brands:** Goodyear	$32,000,000
89	Atlantic Richfield (Los Angeles, CA) **Major Brands:** ARCO	$31,067,600
90	Emerson Electric (St. Louis, MO) **Major Brands:** Emerson, White-Rodgers, Alco, Copeland, Skil, Liebert, Rosemount	$31,000,000
91	Gillette (Boston, MA) **Major Brands:** Gillete, Good News, Dry Idea, White Rain, Paper-Mate, Flair, Liquid Paper, Braun, Silkience, Mink Difference, The Dry Look	$30,000,000
92	McCormick & Co. (Hunt Valley, MD) **Major Brands:** McCormick, Schilling, Cake Mate, Pasta Prima, Gilroy, Stange, Gentry, Armanino Farms, Golden West, Setco	$29,868,000
93	Phillips Petroleum (Bartlesville, OK) **Major Brands:** Phillips 66, Marlex, K-Resin, Ryton, Phillips Fibers	$28,303,000
94	Squibb (Princeton, NJ) **Major Brands:** Capoten, Corgard, Acti-Derm I, Azactam, Isovue, Choletec, NovoPen	$27,804,868
95	Rohm & Haas (Philadelphia, PA) **Major Brands:** Plexiglas, Paraloid, Rhoplex, Primal, Kathon, Acrysol	$27,500,000
96	Upjohn (Kalamazoo, MI) **Major Brands:** Xanax, Halcion, Motrin	$27,200,600
97	Masco (Taylor, MI) **Major Brands:** Drexel, Heritage, Henredon, Dixie, Hickorycraft, La Barge, Delta, Epic, Weiser, Baldwin, Merillat, Fieldstone, Aqua Glass, Hot Spring, Thermador	$26,723,500
98	Hasbro (Pawtucket, RI) **Major Brands:** Hasbro, Playskool, Milton Bradley, G.I. Joe, My Little Pony, Transformers, Tinkertoys	$26,401,000
99	Gold Kist (Atlanta, GA) **Major Brands:** Gold Kist	$26,000,000
100	Ashland Oil (Somwhere, KY) **Major Brands:** Ashland, Valvoline	$25,866,000

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Above Average	461
Average	462
Below Average	463

MARK SPAULDING
Associate Editor

"The impact of the packaging industry on the overall U.S. economy should not be underestimated . . . not when our Top 100 Giants alone spend more than $3 million every hour of every business day on materials and containers to get their products to market."

PLASTIC FILM SWEETENS SALES

Now even the smallest candy makers use plastic packaging to attract new fans and save money

By Greg Erickson
Senior Editor

A combination of new demographic ingredients makes the outlook for this $12 billion industry seem semisweet.

First of all, affection for candy runs deep in America: According to a study prepared for the National Confectioners Association, about 31 per cent of Americans said they bought and ate candy at least once a month; 56 per cent or more said they bought and ate candy at least once a week; 9 to 10 percent said they ate candy every day.

Also a positive sign as the NCA interprets it is a recent finding by a University of Southern California professor: The portion of the American population termed "affluent" has risen from roughly 5 per cent to as high as 18 per cent. Americans are likely to use candy to satisfy—as ads for a premium chocolate mint put it—their "urge to splurge."

There is, however, a hint of bitter in the mix:

Annual per capita consumption of confections in the U.S. stands at 19 pounds. That's the problem: It just stands there. No significant increase has occurred in the past three years.

New-product introductions in the confectionery field totaled 150 in 1986. Meanwhile, retail shelf space in the candy department has not grown.

And two other factors are changing the way confectioners market their products:

The U.S. birth rate is presently the lowest in our history, and the median age of the American population, now 32, will hit 40 by the end of the century.

Plastic takes over

Packaging is playing a big part in the confections industry. Paper and foil are rapidly being outmoded by plastic films—chiefly white opaque oriented polypropylene (OPP) and polyester. Barrier materials such as PVDC and metallized films are boosting shelf life. Excellent graphics and printing are attracting discerning eyes. Improved tamper-resistance is allaying fears.

Consumers can still find a few sweets packaged in paper and foil, but less and less often. Within the past few years, giants Mars, Hershey, and Nabisco have moved almost entirely to plastic film; smaller companies have followed. The consensus among representatives of packaging suppliers and converters interviewed by PACKAGING magazine is that when existing paper and foil machinery wears out, even the smallest candy companies will change over to plastics.

Neither biggest nor smallest is Boyer Bros., maker of Mallo Cup, Peanut Butter Cup, and Smoothie. A family-owned business until it was purchased by Consolidated Brands in 1984, Boyer had not drawn a great deal of attention to itself with its glassine packaging. But as this story was being written, Boyer was getting sort of flashy. Said Dave Koelle, purchasing director, "We're going to plastic now because we want to become more aggressive in our marketing." Boyer's plastic-clad line was scheduled to start appearing in stores midsummer.

Shelf life zooms

A big benefit will be longer shelf life. Koelle said he expected Boyer's new OPP wrappers to raise the shelf life of its confections from six to nine months. Other confectioners have reported a doubling of shelf life when they went from non-plastic to plastic packaging.

Making packages air-tight enough to keep candy fresh so long is easy when plastic films —either heat-sealed or cold-sealed—are used. Some of these wrappers are so tight they look like little balloons. A fringe benefit is that air trapped inside the puffy little packages serves as cushioning.

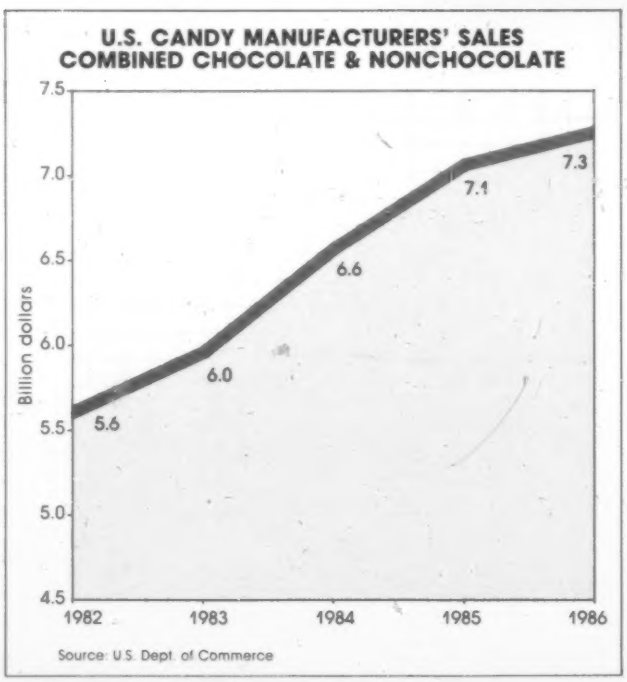
Chocolate bars may not exactly spoil, but eventually they can go stale and pick up unwanted odors. PVDC-coated polypropylene is one material being used to provide an aroma barrier.

A move to plastic packaging has helped candy makers put an end also to infestation, which one packaging machinery distributor said was a particularly serious problem for makers of chocolate bars that contain natural ingredi-

ents such as nuts and raisins. Said a converter, "Bugs can get through gaps in paper seals and even through pinholes in aluminum foil." Insects can gnaw through glassine but either can't or won't chew on polypropylene.

When PACKAGING magazine's 1988 Consumer Survey asked consumers which foods they felt should be available in tamper-evident packaging, more respondents selected candy than any other type of food. Plastic film, which seals securely, provides the tamper evidence that consumers want.

Few candies still are sold in unsealed packaging. A cookie-sized chocolate-covered mint loosely wrapped in a sheet of laminated paper foil looked highly susceptible until its maker moved to metallized film. Hershey's

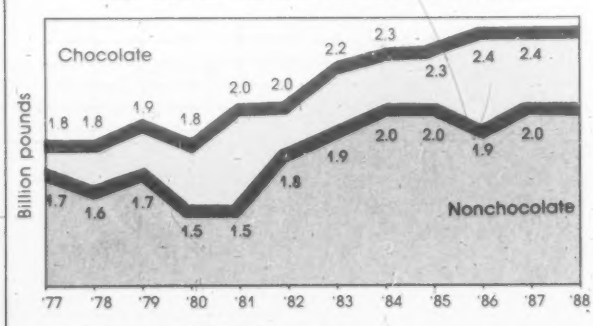


One after another, candy bars are getting dressed up in plastic-film wrappers, which provide long shelf life. Another benefit is tamper evidence: Consumers must destroy the packaging to get at the goodies.

Plastic wrappers are so air-tight that they can do double-duty as cushioning

Brilliant colors, made possible by new plastic films, widen the eyes of consumers. The flash of metallized films also attracts attention while providing an excellent barrier.

U.S. CANDY MANUFACTURERS' SALES



Source: Government and industry estimates

Kisses—all 1,500 produced every minute of every day—are still individually dressed in aluminum foil, but recently they have become available at the candy counter packaged nine to a tamper-resistant metallized-film bag.

Candy moves upscale

There's still a market for venerable Pez candy, Necco wafers, and cherry licorice, and it's not what anyone would call "upscale." But that is an adjective being used to describe other candy aimed at the affluent adult.

Reverse-printed laminated film structures are giving candy packages the much-desired "wet look," which seems to speak to the adult consumer of high quality. Reflective wrappers are also desirable.

Some candy—most notably Cadbury's Caramello bar—makes the most of metallized polyester as a graphic element. And demetallized polyester bags feature brilliant spots of metallization against transparent areas through which the sweets can show off their delectable colors.

Other candy makers use metallization primarily as a barrier. The wrapper of Mars' Kudos granola bar, for example, is made of a metallized-film lamination. The consumer does not initially see the metal, since it is on the inside.

OPP and polyester films also afford superb print jobs. Said Koelle, "We're not going to change the package graphics, but we will be calling attention to our package through the stronger colors we're going to achieve with the plastic."

Candy makers are also using product photography on wrappers to tantalize the consumer. One excellent example is the Bun bar from Storck. Available since 1906, Bun had an identity problem. Because its size and shape did not follow traditional dimensions, said a converter, "People didn't recognize it as a candy bar until the company put a photograph of it on the package." The move from paper wrapping with no photo to plastic film with photography helped boost sales 57 per cent in one year.

Line speeds jump

Heated competition has brought about a war of inches and ounces. Said one industry observer, "When Hershey increased its bar size by 14 per cent without raising the price, the rest of the candy industry had to follow suit. The smaller companies got squeezed because they didn't have Hershey's efficiencies."

Confectioners are now engaged in an efficiency war, and cold-seal machinery is one of the weapons. "We've seen some of our customers go to cold seal and nearly double their line speed," said one converter. Cold sealing also solves the problem of heat damage to the candy.

Heat-seal speeds are increasing, too. One supplier of such equipment recently introduced a machine capable of wrapping candy bars in heat-sealing metallized OPP at the rate of 250 a minute.

There are other savings. Koelle said he expected to realize packaging cost reductions as a result of Boyer's move from glassine to OPP. "We feel the plastic will run more efficiently on our wrapping machines," he said. "We're hoping for a saving of 5-10 per cent in materials." ■

PLEASE RATE THIS ARTICLE

How would you rate this article? To reply, circle the appropriate number on the reader service card:

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GREG ERICKSON
Senior Editor

"It's amazing how fast consumer tastes change. Some big confectioners made the switch away from glassine, and suddenly the consumer began telling himself that 'quality' candy bars came in plastic wrappers."

C1850-1A
8/18/88

PACKAGING

THE CAHNERS MAGAZINE FOR DECISION-MAKERS/AUGUST 1988

EUROPE'S NEW MICROWAVE MEALS

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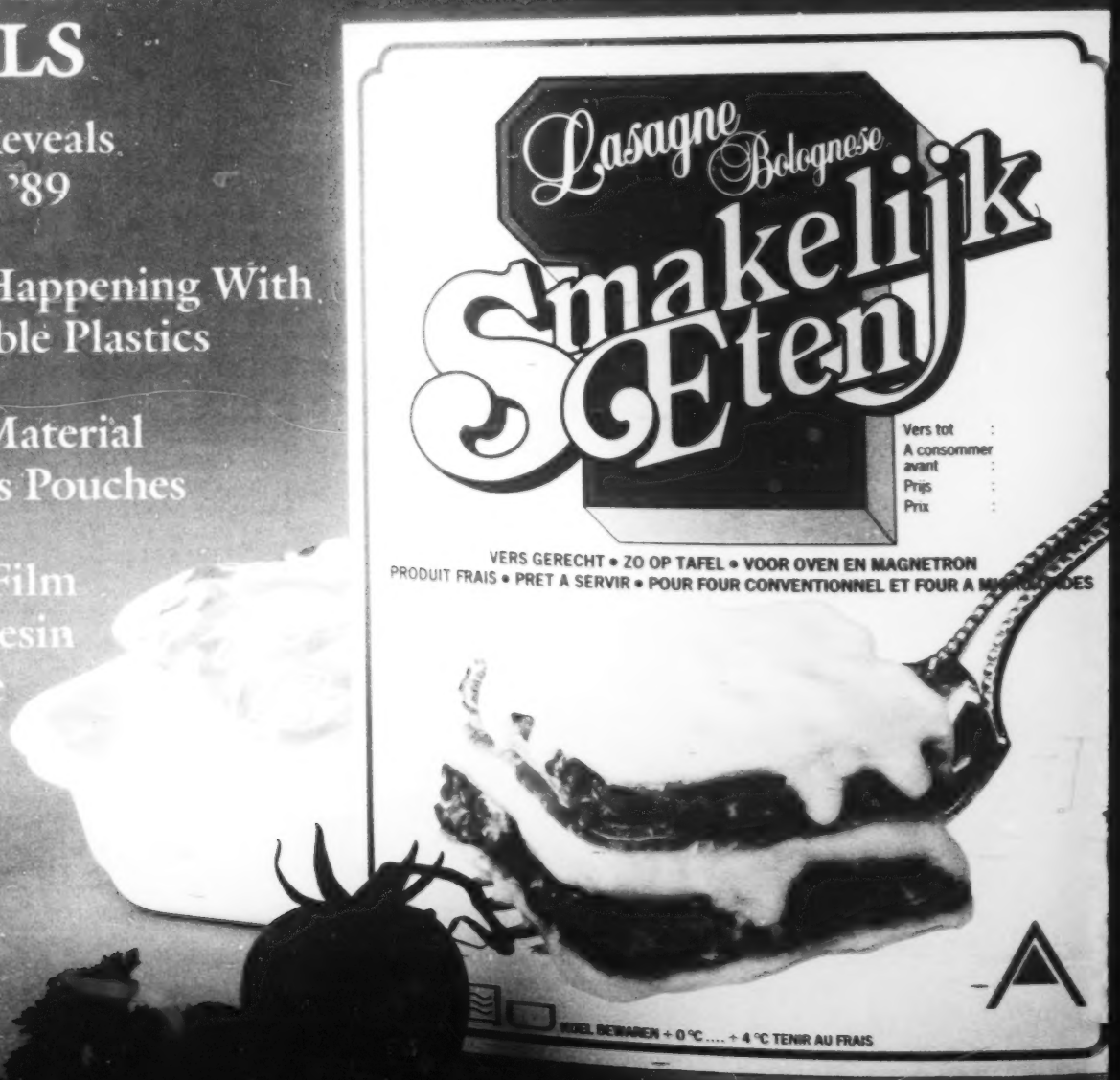
Stretch-Film Fights Resin Shortage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EDITORIAL OFFICES
DES PLAINES, ILL. 60017-5080
Cahners Plaza
1350 E. Touhy Ave. P.O. Box 5080
312/635-8800

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PACKAGING NEWS

Project U.S. Plastic Film Demand To Grow 3.3% Yearly Through '92

New study sees greatest opportunities for growth in LLDPE, HDPE, PP films

Based upon new technologies, moderate price increases and new market opportunities, demand for plastic film in the U.S. will grow 3.3 per cent annually through 1992 when it will total nearly 10 billion pounds, according to "–213 Plastic Films Markets," a recently released industry study from The Freedonia Group, Inc., Cleveland, Ohio.

The study concludes that the greatest opportunities are for linear low-density polyethylene, high-density polyethylene and polypropylene films in nonfood and food-packaging markets. LLDPE will grow 6 per cent annually through 1992 because of "excellent physical properties and favorable costs factors."

Other study conclusions: Key in polypropylene's growth will be the continuing replacement of traditional cellophane markets. Oriented PP has penetrated 60 per cent of the cellophane market and will continue its inroads into paper, glassine and foil. Metallized polyester, as a substitute for foil, will present opportunities for polyester films. Cellophane demand will continue to decline through 1992 because of increasing woodpulp costs and increased competition from other plastic films. It will not phase out totally because of its excellent machinability, a wide heat-seal temperature range, durability and other important characteristics.

U.S. PLASTIC FILM DEMAND
(million pounds)

Item	1977	1987	1992	2000	% Annual Growth '77-'87	% Annual Growth '87-'92
Total Film Demand	4937	8248	9700	12100	5.3	3.3
Film Demand By Resin						
Polyethylene	3830	6372	7467	9230	5.2	3.2
Polyvinyl chloride	231	436	526	670	6.5	3.8
Polyester	308	464	585	770	4.6	3.9
Polypropylene	203	494	625	845	9.3	4.8
Cellophane	188	103	90	65	-4.2	-2.7
Cellulosics	69	65	66	70	-0.6	0.3
Polyvinylidene chloride	54	93	112	135	5.6	3.8
Polystyrene	44	81	90	105	6.3	2.1
Other Resins	40	421	450	200	44.7	4.4

Source: The Freedonia Group, Inc.

The study envisions greatest market opportunities in nonfood packaging because of abundant applications, continued trends toward smaller packaging and fast product turnover. Growth will be stimulated in drug, health and beauty aids markets by needs for sterility, barrier properties and continued tamper-proof applications.

The 148-page study is available at $1,600 from The Freedonia Group, Inc. For more information circle Reader Service No. **500**.

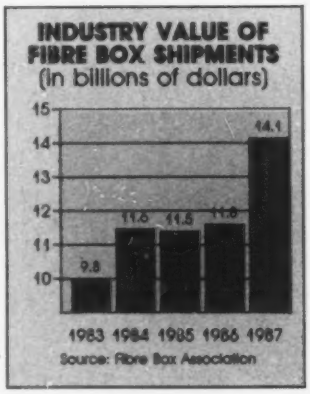
1987 Fibre Box Shipments Were Record $14.1 Billion, 19.9% Gain

Plants shipments of 297.8 billion square feet of products topping 1986 by 4.9%

The fibre box industry continued its record-breaking growth trend in 1987. According to the Fibre Box Association, value of the year's shipments was $14.1 billion, a 19.9 per cent increase over 1986, the previous high value year. Price raises in container board were a major force.

Shipments broke records in each month continuing a trend that got underway in September, 1986. October was the largest single month for 1987 shipments—almost 28 billion square feet of product. The third calendar quarter also set a quarterly record—76.4 billion square feet.

All geographic areas of the U.S. set records with the largest growth rate in the southeast, 6.1 per cent. Other areas: south central, 5.9 per cent; western, 5.1 per cent; east central, 4.3 per cent; northeastern, 3.9 per cent; north central, 3.5 per cent.



Ball Moving Plastics Division HQ

Relocation to Colorado part of consolidation of company's packaging-products businesses

Ball Corp. has begun the process of moving the headquarters of its plastic-packaging business from Evansville, Ind. to Westminster, Colo. This is part of Ball's consolidation of its packaging products business. The packaging products group is headquartered at the Ball office center in Westminster where its metal container division is also based.

"Moving our plastics division to Colorado allows us to co-locate two closely related businesses, reducing annual costs by $3 million," said Delmont A. Davis, executive vice president, packaging products.

FDA Revises T-R Packaging Requirements For O-T-C Drugs

FDA sees some current technologies incapable of meeting 1982 regulation

The Food and Drug Administration has made available a compliance policy guide that revises the list of acceptable tamper-resistant packaging technologies for over-the-counter drug products. The Flexible Packaging Association has distributed copies of the new guide to FPA members.

On Nov. 5, 1982 the FDA issued a regulation requiring that most O-T-C drug products be in T-R packaging; the packaging must use an indicator or barrier to entry that is distinctive by design or must use an identifying characteristic, such as a pattern or name. The regulation also listed 11 T-R packaging technologies capable of meeting the requirements.

Now FDA feels that some current packaging technologies cannot meet these requirements and has revised its original list. The new one focuses on O-T-C drug products but the approved packaging technologies may apply to some food products.

Quantum Chemical's USI Division To Build Centralized R&D Center

$32 million Cincinnati complex scheduled for occupancy in 1991

Quantum Chemical Corp.'s USI Division will build a $32 million research and development center adjacent to its Cincinnati headquarters. To be ready for occupancy in July, 1991, the facility will consolidate the R&D operations now housed at USI's Rolling Meadows, Ill. and Cincinnati laboratories. The new center will initially be occupied by 270 research personnel.

The center will include a two-story conference, library and administration building; a five-story building for basic, analytical and catalyst research and a three-story building for applied research. The three interconnecting buildings will have nearly 250,000 square feet of space.

More than 60,000 square feet of the applied research facility will be devoted to processing technology. All of the fabricating technology now researched at Rolling Meadows will be continued at Cincinnati.

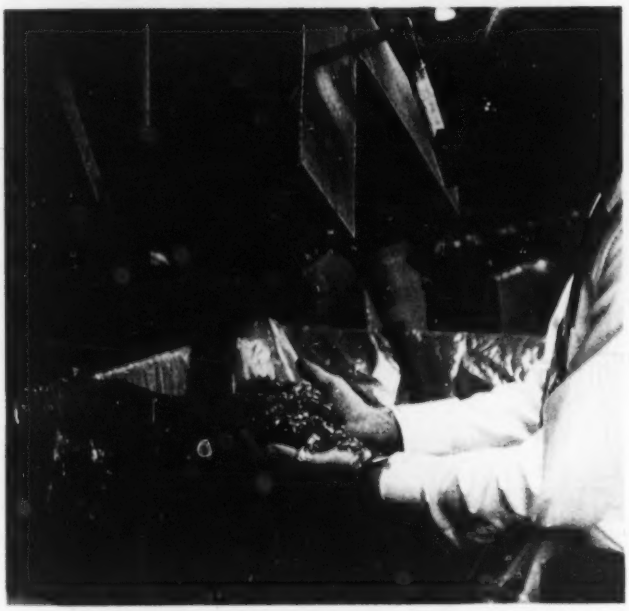
RECYCLING NEWS

Market Healthy For Used PET

Collection is the big problem, says recycler

With its 1987 sales of fiber made from waste PET (polyethylene terephthalate) beverage bottles totaling $261 million in 1987, South Carolina-based Wellman, Inc., proved that markets for this material were healthy. According to Wellman, the largest recycler of post-consumer PET bottles in the U.S., those markets are growing.

In a speech to the Recycling-plas III conference sponsored recently in Washington, D.C., by the Plastics Institute of America, Dennis Sabourin, Wellman vice president, said his company purchased 100 million pounds of bailed PET bottles in 1987—between 71 and 83 per cent of the total collected—and could have utilized twice that much. "The problem is not one of end users," said Sabourin, "The problem is the infrastructure of collection."



Flakes of clean green PET, which once composed soft-drink bottles, come spewing out into the hands of Robert Jordan, manager of Wellman's Material Recovery Division.

One effective means of both collecting and separating plastic beverage bottles is the mandatory deposit system, Sabourin said. But, he added, "The system is burdensome to the retailer and the beverage manufacturer, who has the ultimate responsibility for recycling." Curbside collection can also be effective, Sabourin said, provided a system exists for separating PET bottles from HDPE bottles. "The future of our industry," Sabourin told the audience of 300 plastics-industry representatives, "depends on our ability to solve the collection problem."

If it is solved, he said, the recycling of PET bottles could reach 50 per cent by 1992. "You can be assured that whatever mode of collection emerges, Wellman will play an active part in its development."

Fiber made by Wellman from post-consumer bottles is purchased for use in highway and railroad-bed construction, for insulation in winter coats, and for carpeting. "This year," Sabourin said, "35 per cent of the polyester carpet made in this country is made of Wellman fiber, which is made from post-consumer bottles."

Sabourin said Wellman separates clear PET bottles from green ones because fiber made from the green bottles cannot be dyed and therefore is seen as having a lower value than clear. For this reason, if bottles are shredded in mixed-color form, their recyclability is severely limited, he said.

Can Roundup Grows This Fall

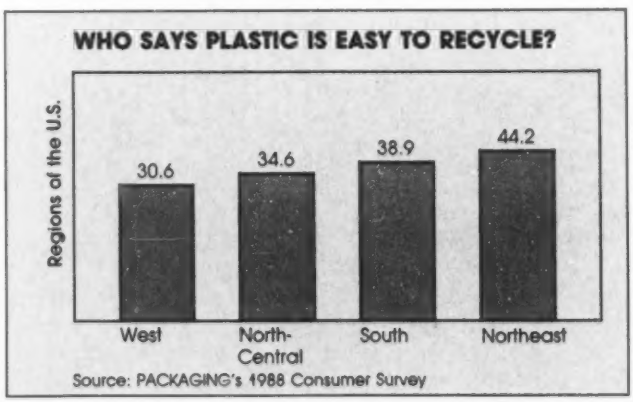
Aluminum program to reach a million homes

The Great Aluminum Can Roundup, sponsored by the Can Manufacturers Institute (CMI), is being expanded this fall to reach as many as a million households in five markets.

Communities involved this year are Madison, Wisc., Columbus, Ohio, San Fernando Valley and Sacramento, Calif., and Chicago.

Right after Labor Day, volunteers will hand out free plastic bags supplied by the Hefty Bag Co., for use in saving aluminum cans. The volunteers will return later in the fall to pick up the filled bags and take them to local aluminum-can recycling centers to be redeemed for cash. The money will be returned to community groups.

Last year, the first Roundup was conducted in seven smaller markets and was a "resounding success," said Michael Dunn, CMI president.



Regions Differ On Plastic Recycling

Consumer survey reveals diverse views

Attitudes about the ease with which plastics packaging can be recycled differ regionally.

According to data collected by PACKAGING magazine for its 1988 Consumer Survey, 37.3 per cent of all respondents said they felt plastics were very easy/easy to recycle. Only 30.6 per cent of the residents of the West said they thought plastics were very easy/easy to recycle. However, more than 44 per cent of the respondents who resided in the Northeast said so.

Survey questionnaires were sent by PACKAGING to 1,000 households nationwide. Over 75 per cent of the consumers responded with opinions on a wide range of packaging-related topics. A full report on the survey results appeared in PACKAGING's June issue.

Company Wants Recycled Products

Resin plant alerts its vendors

A purchasing program implemented recently at Goodyear's polyester resin plant in Point Pleasant, W. Va., requested vendors of office products and packaging products to supply the plant with recycled materials whenever possible. "Trying to get the plant vendors to sell us products made from recycled materials shows that we are serious about recycling and the solid-waste issue," said Ed Sisson, head of the company's polyester recycling program.

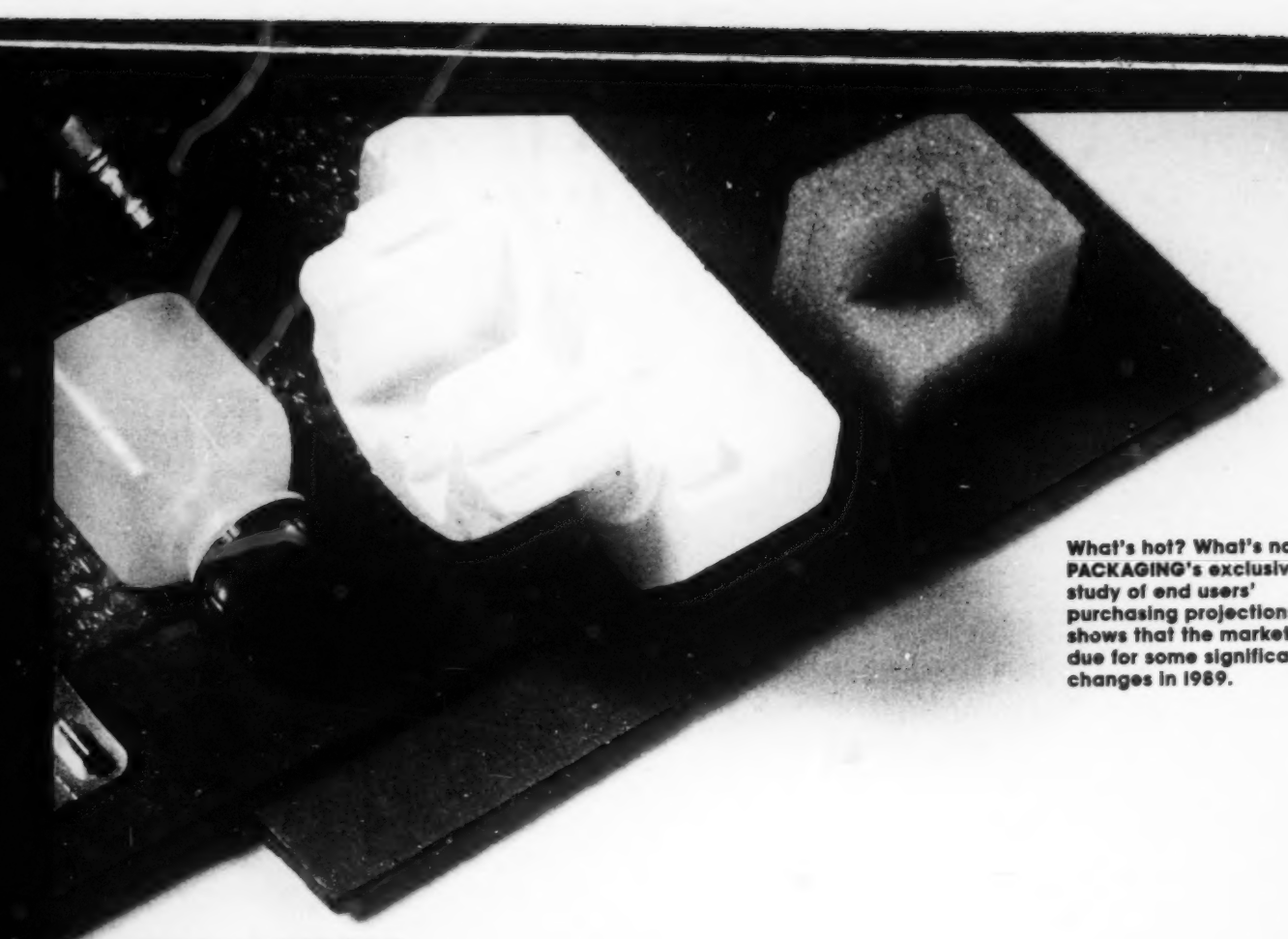
Sisson noted that plastic pallet strapping, made from recycled polyester soft-drink bottles, is an example of the types of materials the plant wants to buy.

In a letter to 20 vendors, Goodyear asked them to identify any existing recycled products being sold to the plant and to "seek out and supply us with products made from recycled material."

TOP 10 PACKAGING TRENDS

Per cent of all survey respondents planning greater use in 1989

Microwavable packaging	79.3%
Aseptic packaging	68.6
EVOH	68.6
Tamper-evident closures	66.7
Peelable lidding	65.7
Certified vendors	63.6
High-barrier packaging	63.5
Tamper-evident packaging	63.5
PET bottles, jars	60.4
In-mold labels	60.2



What's hot? What's not? PACKAGING's exclusive study of end users' purchasing projections shows that the market is due for some significant changes in 1989.

SPECIAL REPORT

SURVEY REVEALS PLANS FOR '89

Here's the outlook for 100 different concepts, materials, and containers between now and 1990

By Greg Erickson
Senior Editor

Which types of packaging are most likely to grow in use during the coming year? Which ones aren't? The answers here are provided by the people who ought to know: 2,014 packaging buyers and users nationwide who responded to PACKAGING's 1988 Materials Survey.

Some clear trends

As shown in the Top 10 Packaging Trends table, the 1988 Materials Survey substantiated a number of significant packaging patterns. PACKAGING has long documented these trends by means of last year's Materials Survey and four annual Consumer Surveys. This year's Materials Survey lends additional credence to past findings by illustrating that buyers of materials for such packaging techniques plan to invest heavily in them next year.

Topping the list of high-growth concepts according to respondents in the entire survey group is microwavable packaging: 79.3 per cent of all users of microwavable packaging said they expected to use more of it in 1989 than in 1988.

It's important to break out foods processors for a closer look. As shown in the Top 20 Food-Packaging Trends table, 81.3 per cent of Foods Group users of microwavable packaging said they expected to buy more materials for it in 1989 than in 1988. That may account in part for the Top-20 rating of metallized film among respondents in the Foods Group, since this material is widely used in microwavable packaging as a susceptor. (It is also increasingly used in bags and wrappers for snack foods and confections.) The emphasis on microwavability may have helped push up projected growth figures for peelable lidding, also among the foods Top 20. It may have hurt aluminum foil trays, which are perceived by consumers as non-microwavable: Although 55.1 per cent of Foods Group users of aluminum-foil trays said they would use more of these containers in 1989 than in 1988 and 32.7 said they would use the same amount, a relatively high 12.2 per cent said they would use fewer. In comparison, Foods Group figures for plastic trays are: 56.1 per cent, more; 38.3 per cent, the same, 5.6 per cent, less.

Aseptic packaging placed second in the Top 10 Packaging Trends list for all respondents. Among all users of this technology, 68.6 per cent reported an intent to make greater use of it in 1989. The rate of use of aseptics is high among processors of canned fruits, vegetables, and preserves: 30.4 per cent. Nearly three-quarters of those users said they intended to use more aseptic packaging in 1989 than in 1988.

Tamper-evident packaging, and thus tamper-evident clo-

Over 81 per cent of Foods Group users of microwavable packaging plan to use more in '89

sures, also made the Top 10 Packaging Trends for all respondents and appears likely to grow significantly among Foods Group users next year. The Top 20 Food Packaging Trends table shows that 70.9 per cent of Foods Group users of tamper-evident packaging expect to use more of it in '89. Not unexpectedly, users of tamper-evident closures, inner seals, shrink-band closures, and shrink-band labels (which can double as neck bands), reported plans to use more of these materials next year.

High-barrier packaging as a concept and EVOH, one of the two leading high-barrier plastic resins, also scored well enough to make the list of Top 10 Packaging Trends. Plans for growth in high-barrier packaging among Foods Group users was corroborated by high growth percentages for both EVOH and PVDC.

PET leads containers

Among all respondents, PET (polyethylene terephthalate) bottles showed the largest likely increase in use of all containers for 1989 and also placed in the foods Top 20. Of all users of PET bottles —13.6 per cent of the total number of respondents—60.4 per cent said they planned to use more of them in 1989 than in 1988.

Multilayer plastic containers, plastic trays, and plastic cans also should continue their current high rate of growth among all users through 1989. Use of PVC for bottles and jars appears likely to diminish somewhat. Of all respondents now using PVC in this way, 8.5 per cent of them said they would reduce their use of it in 1989. Over 18 per cent of Foods Group users of PVC said they would use fewer of them. In contrast, less than 1 per cent of all Foods Group users of PET bottles said their use of

CONTAINERS
Current and projected use
Per cent of all survey respondents

	Currently use material	New material will begin to use in 1989	In 1989 will use: More	Same	Less
Aerosols	21.5%	0.4%	29.9%	64.9%	5.2%
Non-aerosols	15.8	0.6	42.9	56.5	0.6
Bag -in-box (dry products)	16.8	0.7	42.5	55.0	2.6
Bag-in-box (liquids)	9.2	0.7	47.3	49.3	3.4
Bags, multiwall	15.4	0.1	46.1	49.0	4.9
Bags/pouches, pre-made	29.0	1.1	44.8	49.8	5.4
Bottles/jars, glass	32.2	0.4	33.9	54.8	11.2
Bottles/jars, PET	11.7	1.9	60.4	36.7	2.8
Bottles/jars, polyethylene	31.9	0.6	54.8	42.6	2.6
Bottles/jars, PVC	13.1	0.3	43.0	48.5	8.5
Bottles/jars, polypropylene	15.3	0.2	44.1	49.8	6.0
Bottles/jars, multilayer plastics	4.7	1.0	55.0	42.2	2.8
Cans, aluminum	10.3	—	48.8	43.9	7.3
Cans, composite	5.9	0.2	33.9	54.2	11.9
Cans, paperboard	5.1	0.2	35.5	57.3	7.3
Cans, plastic	7.0	0.7	56.7	40.7	2.7
Cans, steel	20.5	0.1	39.9	49.5	10.6
Cartons, gable-top	5.8	0.3	56.6	32.6	10.9
Cartons, folding paperboard	60.9	0.5	58.0	38.8	3.2
Cups/tubs, plastic	14.5	0.7	46.6	49.0	4.4
Cups/tubs, paperboard	5.7	0.1	38.8	58.6	2.6
Dispensers, pump-type	12.8	0.6	43.8	52.1	4.1
Pails, metal	15.1	—	33.7	55.3	11.0
Pails, plastic	29.6	0.2	44.4	52.1	3.4
Trays, aluminum foil	3.3	0.1	45.1	45.1	9.9
Trays, plastic	16.4	0.8	51.9	41.8	6.2
Tubes, squeezable	11.4	0.6	49.0	44.8	6.2

PACKAGING CONCEPTS
Current and projected use
Per cent of all survey respondents

	Currently use concept	New concept will begin to use in 1989	In 1989 will use: More	Same	Less
Aseptic packaging	8.3%	1.3%	68.6%	29.3%	2.1%
Blister packaging	16.6	2.0	59.4	36.4	4.2
Certified vendors	14.8	1.2	63.6	35.7	0.6
Contract packaging	24.0	1.2	50.0	43.9	6.1
Controlled-atmosphere packaging	7.7	0.7	53.3	46.1	0.6
High-barrier packaging	9.5	1.2	63.5	35.6	1.0
Microwavable packaging	4.5	1.2	79.3	19.8	0.9
Multipacks	10.9	0.6	54.8	44.7	0.4
Plastic squeeze bottles	10.5	0.6	45.8	52.0	2.2
Rackable (display) packaging	9.4	0.7	52.7	43.3	3.9
Retortable pouches	1.3	0.3	48.6	48.6	2.9
Reclosable bags	6.3	0.7	48.6	49.3	2.2
Single-serve packaging	9.8	0.5	57.4	41.7	1.0
Skin packaging	3.0	0.2	31.7	60.3	7.9
Tamper-evident packaging	13.4	1.5	63.5	36.5	—
Unit-dose packaging	5.5	0.4	58.6	39.7	1.7
Vacuum packaging	6.5	0.4	44.1	53.7	2.2

CLOSURES
Current and projected use
Per cent of all survey respondents

	Currently use material	New material will begin to use in 1989	In 1989 will use: More	Same	Less
Metal closures	30.5%	0.5%	35.0%	50.5%	14.5%
Plastic closures	39.0	1.0	55.3	42.6	2.1
Screw caps	31.3	0.2	45.0	51.6	3.4
Vacuum lug caps	3.2	0.2	46.1	48.7	5.3
Shrinkable bands	13.5	1.0	53.2	38.6	8.2
Inner seals	13.6	0.9	51.9	43.0	5.1
Dispensing closures (push-pull, flip top, etc.)	15.2	0.7	54.2	42.0	3.8
Dispensing closures (shaker type)	4.1	0.3	36.7	58.9	4.4
Easy-open cans	4.7	0.5	50.0	44.2	5.8
Peelable lidding	6.2	0.8	65.7	30.7	3.6
Plastic overcaps	11.5	0.4	41.1	55.5	3.4
Child-resistant	13.1	0.3	49.6	49.3	1.1
Tamper-evident closures	14.5	1.6	66.7	33.0	0.3

LABELING
Current and projected use
Per cent of all survey respondents

	Currently use material	New material will begin to use in 1989	In 1989 will use: More	Same	Less
Foil	18.5%	1.3%	44.3%	46.1%	9.6%
Paper	68.8	0.8	49.7	45.1	5.1
Plastic	13.7	0.6	47.3	49.3	3.4
Pressure-sensitive	67.3	1.4	55.3	40.9	3.7
Adhesive applied on-line	22.3	0.9	42.7	51.9	5.3
In-mold labeling	3.4	0.8	60.2	38.6	1.1
Heat transfer	7.3	0.5	45.4	40.8	13.8
Shrinkable bands	10.1	1.8	54.4	39.4	6.2

them would drop next year.

In studying results for container use, PACKAGING broke out end users in the soft-drink subgroup of foods and beverages. The survey shows that aluminum cans are used by a higher percentage of respondents in the soft-drink industry than either PET bottles or glass bottles. The percentages were: aluminum, 60.9 per cent; PET, 58.6 per cent; glass, 48.8 per cent. Almost 16 per cent of the glass-bottle users in this subgroup said they would use fewer of them in '89; only 4 per cent of users of the other two containers said their use of them would decrease.

Gable-top cartons are used by 6.1 per cent of all survey respondents. Of those users, 56.6 per cent said they would use more of these containers in 1989. However, a fairly large percentage—10.9—said they would use fewer.

The fluid-milk subgroup provides an interesting look into possible changes in the container marketplace. Gable-tops are used by 63 per cent of respondents who package fluid milk, and 72.4 per cent of those carton users said they planned to increase their use of them next year. Polyethylene bottles are used by 30.4 per cent of the responding fluid-milk processors, and 78.6 per cent of them said they would use more of these bottles in '89 than they used in '88. Also, 30.4 per cent of the fluid-milk producers reported using aseptic packaging, and nearly 78.6 per cent of them said they would use this technology more next year.

Steel cans are used by 20.6 per cent of all Materials Survey respondents. Less than 40 per cent of the users of steel cans said they expected to increase their use of them in '89; 10.6 per cent said they would use fewer of them. Among all respondents, over 11 per cent of the users of composite cans and glass bottles and jars said they planned to lower their usage of these containers next year.

In the Pharmaceuticals Group, 61.8 per cent of the respondents are users of glass bottles, but over 19 per cent of them said their use of these containers would fall in 1989. Polyethylene bottles are used by 66.1 per cent of the Pharmaceuticals Group respondents and by 80.8 per cent of respondents in the Cosmetics Group.

For cosmetics, blister packaging seems likely to grow. Nearly 32 per cent of the respondents here are blister-pack users, and 65.6 per cent of them said their use of this form of packaging would rise in 1989. As shown on the Top 10 Pharmaceuticals-Packaging Trends table, 71.2 per cent of Pharmaceuticals Group users of blister packs said they would use more of them in 1989.

Metallization grows

Big gainers in flexible packaging materials among all respondents are likely to be metallized film, with 56.8 per cent planning to use more, and shrink film for individual packages, with 56.8 per cent expecting to increase their use of it. Slightly over 10 per cent of respondents in the Pharmaceuticals Group are users of metallized film. Over 68 per cent of them said their use of this material would increase in '89.

Flexible co-extrusions and laminations continue to expand in foods packaging. Almost 57 per cent of the Foods Group users of laminations

1988 SURVEY BIGGER, BETTER THAN 1987

PACKAGING magazine's 1988 Materials Survey is more comprehensive than the 1987 version in two important ways.

First, the range of packaging users contacted was expanded. Last year the survey focused on food and beverages. This year the survey comprises that industry, here called the Foods Group, plus the following: chemicals and allied products, which takes in the Pharmaceuticals Group and Cosmetics Group; the Electronics Group made up of electronic and other electrical equipment and components; the Instruments Group composed of makers of measuring, analyzing, and controlling instruments; stone, clay, glass, and concrete products; and miscellaneous manufacturers.

Second, this year's survey is larger in terms of the number of responses. Questionnaires went to 10,000 subscribers of PACKAGING magazine—twice as many as last year. Over 20 per cent responded.

Most of the tables show percentages for respondents who "Currently use material" as well as for "New material will begin to use in 1989." PACKAGING refers to those combined respondents as users.

Over 60 per cent of users of in-mold labeling will raise their use of it between now and 1990

and coextrusions said they planned to use more of these materials in '89. Among the flexible plastic films in foods packaging, use of polyester is growing most rapidly. Over 53 per cent of the users of this microwavable, metallizable film said they would use more of it in 1989. However, 10 per cent of them said they would use less.

Shrink-wrapped individual packages, used by 36.1 per cent of all respondents, also should see sizable growth. Of those users, 57 per cent said they would use more in 1989 than in 1988. In keeping with the high expected growth rate of stretch film for individual packages, 55.6 per cent of all the users of EVA reported plans to use more next year.

In-mold labeling rises

In-mold labeling, though currently used by only 4.2 per cent of all Materials Survey respondents, is the clear leader in terms of potential growth among all label technology in this year's survey. Over 60 per cent of all its users said they would use more in 1989 than in '88. Finding favor among high-volume users of blow-molded plastic bottles, in-mold labeling makes labeling the responsibility of the blow-molder, not the end user of the bottle.

Among respondents in the pharmaceuticals field, pressure-sensitive labels are most widely used, by 83 per cent of these respondents. And 60.9 per cent of these users said their use of pressure-sensitive labels would rise in 1989.

According to a recent report from Business Communications Co., plastic closures, especially those made of polyethylene, will eventually replace metal closures. That prediction appears sound. PACKAGING's 1988 Materials Survey shows that 40 per cent of the respondents

FLEXIBLE MATERIALS
Current and projected use
Per cent of all survey respondents

	Currently use material	New material will begin to use in 1989	In 1989 will use: More	Same	Less
Aluminum foil	12.1%	0.4%	48.4%	47.1%	4.5%
Cellophane	13.3	0.1	36.4	53.2	10.4
Co-extrusions	8.6	0.5	53.8	42.9	3.3
EVA	3.2	0.1	55.6	41.7	2.8
EVOH	1.4	0.3	68.6	28.6	2.9
Ionomer	0.9	—	11.1	72.2	16.7
Laminations	14.0	0.7	54.5	43.2	2.4
Metallized film	8.6	1.2	56.8	40.2	3.0
Nylon	3.3	0.1	34.8	62.1	3.0
Paper	20.3	0.3	44.3	52.7	3.0
Polyethylene	21.9	0.4	47.4	49.7	2.9
Polyethylene, linear low-density	11.2	0.1	52.3	45.0	2.8
Polyester	4.3	0.2	51.6	42.9	5.5
Polypropylene	12.5	0.2	45.0	51.8	3.2
PVC	9.2	0.1	45.7	47.9	6.4
PVDC	2.0	0.1	53.2	44.7	2.1
Shrink film (individual packages)	34.3	1.8	57.0	39.2	3.8
Stretch film (individual packages)	26.8	0.5	54.9	43.1	2.0

CASE PACKING/SHIPPING
Current and projected use
Per cent of all survey respondents

	Currently use material	New material will begin to use in 1989	In 1989 will use: More	Same	Less
Bulk boxes, corrugated	63.3%	0.7%	53.6%	43.9%	2.5%
Bulk boxes, metal	1.4	0.1	31.4	60.0	8.6
Bulk boxes, plastic	4.1	—	36.6	57.3	6.1
Corrugated cases	56.8	0.3	58.1	40.2	1.7
Corrugated cases, high-strength	16.1	0.7	51.6	45.7	2.7
Corrugated cases, partitioned	26.0	0.5	44.4	50.8	4.9
Corrugated cases, preprinted linerboard	18.4	0.7	55.2	41.1	3.7
Cushioning, plastic foam	16.4	0.2	44.3	52.0	3.7
Cushioning, paper, corrugated	9.3	—	36.5	59.4	4.2
Cushioning, foam-in-place	5.3	0.3	36.4	52.7	10.9
Cushioning, preformed plastic	5.0	0.2	40.8	53.4	5.8
Cushioning, anti-static	3.8	0.4	53.2	43.0	3.8
Cushioning, fire-retardant	0.7	—	58.8	29.4	11.8
Drums, corrugated	13.1	0.3	33.0	59.9	7.1
Drums, plastic	17.0	0.1	44.3	51.0	4.7
Drums, metal	24.3	0.1	34.2	56.1	9.6
Pallets, plastic	7.1	0.6	48.4	50.9	0.6
Pallets, wood	66.2	0.4	45.8	49.7	4.5
Shrink-film, tray-packs	13.5	0.7	49.3	48.2	2.5
Slip sheets	20.9	0.3	40.7	53.6	5.6
Stretch wrap, unit loads	48.7	0.7	55.8	43.7	0.5
Strapping, metal	16.5	0.1	27.5	59.6	12.8
Strapping, plastic	33.1	0.3	39.5	54.3	6.2
Tape, gummed	50.3	0.2	41.1	53.4	5.5
Tape, pressure-sensitive	47.1	0.6	48.3	48.5	3.2

TOP 20 FOOD PACKAGING TRENDS Per cent of food and beverage respondents planning greater use in 1989	
Microwavable packaging	81.3%
Tamper-evident closures	76.6
Aseptic packaging	74.3
Tamper-evident packaging	70.9
Shrink-band closures	69.9
EVOH	68.2
PET bottles, jars	67.8
High-barrier packaging	67.1
Shrink-band labels	64.7
PVDC	63.2
In-mold labels	62.5
Peelable lidding	61.7
Inner seals	61.6
EVA	61.3
Plastic cans	61.0
Single-serve packaging	60.6
Dispensing closures	60.0
Plastic squeeze bottles	60.0
Metallized film	60.0
Corrugated cases	59.7

TOP 10 PHARMACEUTICAL-PACKAGING TRENDS Per cent of pharmaceuticals respondents planning greater use in 1989	
LLDPE	78.6%
Blister packaging	71.2
Metallized film	68.4
Certified vendors	66.0
Shrinkable-band labels	65.1
Multipacks	64.0
Rackable packaging	62.1
Pump dispensers	61.5
Shrink film for individual packages	61.4
Corrugated cases	61.2

TOP 10 COSMETICS-PACKAGING TRENDS Per cent of perfume and cosmetics respondents planning greater use in 1989	
Tamper-evident packaging	90.9%
Certified vendors	82.1
PET bottles, jars	80.0
Stretch film for individual packages	78.1
LLDPE	76.9
Aluminum foil	75.0
Shrink film for individual packages	68.3
Preprinted linerboard for corrugated cases	66.7
Non-aerosols	65.3
Polyethylene bottles, jars	65.0

use plastic closures and 31 per cent use metal. Of the plastic-closure users, 55.3 per cent said they expected to use more of them in 1989 than in '88 and only 2.1 per cent said they would use fewer. But only 35 per cent of the metal-closure users said they would use more of them in 1989 and 14.5 per cent said they would use fewer.

Furthermore, between 13 and 16 per cent of the processors of canned fruits, vegetables, preserves, and salad dressings who use metal closures said they intended to use fewer of them in '89, but none of the users of plastic closures in this subgroup said their use of them would drop. Metal closures are used by 68.3 per cent of the respondents in the soft-drink field; plastic, by 51.2 per cent. That ratio is likely to change, too: 19.2 per cent of the metal-closure users in this category said their use of them would decrease next year, but only 4.2 per cent of the plastic-closure users said their use of them would drop.

Corrugated stays strong

Of all users of corrugated cases, 58.1 per cent said they expected to increase their use of them next year and only an insignificant 1.7 per cent said they would use fewer. High-strength corrugated, in use by a much smaller percentage of respondents than regular corrugated, is not likely to expand as much as the standard material. But preprinted linerboard for corrugated cases should gain significantly. More than 19 per cent of all the survey respondents are users of preprint, and well more than half of them said they planned to increase their use of it in '89.

Corrugated is facing some tough competition, though. Film-wrapped tray packs, which reduce the amount of corrugated needed to securely contain a case's worth of bottles, for example, are enjoying high popularity. Among Foods Group users of shrink-film tray packs, 57.1 per cent said they would use more of them in '89.

Stretch wrap for unit loads also appears likely to continue growing. It is now used by more than half the Materials Survey respondents. Of those users, 55.8 per cent said they expected their use of stretch film to increase. Less than 1 per cent said they thought it would drop.

Cushioning that does more than just cushion is likely to become more prevalent within the subgroup using it most extensively now. Anti-static cushioning is currently used by only 4.2 per cent of all survey respondents, but by almost 23 per cent of respondents in the Electronics Group. Fully 60 per cent of the Instruments Group users of this material said they expected to use more in 1989.

Foam-in-place cushioning is presently used by 14 per cent of the respondents in the Electronics Group. Only 12.5 per cent of these respondents said they planned to use more in 1989. ■

Additional information about packaging materials, containers and components, and industrial and shipping supplies is published in PACKAGING's Encyclopedia, pages 29 to 139.

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GREG ERICKSON
Senior Editor

"Attitudes change. New laws take effect. Innovative products and materials come to market. For anyone who sells or buys packaging, that's a lot to keep track of. Fortunately, more than 2,000 PACKAGING subscribers provided a wealth of information about their plans. It's of vital interest to the entire industry."